

## **QUR'AN AND SCIENCE: A STUDY OF THE COMPATIBILITY OF QUR'ANIC VERSES WITH MODERN SCIENTIFIC THEORIES**

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### **QUR'AN AND SCIENCE: A STUDY OF THE COMPATIBILITY OF QUR'ANIC VERSES WITH MODERN SCIENTIFIC THEORIES**

#### **Abstract:**

Qur'an is the infallible Word of God and since its inception in the world of Space and Time its immutability has been proven time and again. In all the fields of Knowledge it proved to be a miracle of the Divine. Its literary quality is unparalleled and its teachings are the ultimate remedy for the ailments of mankind. Though it's not a book of empirical sciences, we still can find much compatibility of its contents with the modern established scientific theories. Some verses of the Qur'an are much similar to the observational theories of cosmology and biology that the likeness deems it impossible to be a work of any man of the 7th century. In this paper I have tried to compare some Qur'anic verses with some of the important theories of modern Cosmology like the Big Bang theory and expansion of the Universe. I have also brought the modern observational knowledge of embryology as being compatible with many verses dealing with same subject of the evolution of embryo into fetus and the stages of a baby inside a mother's womb. Qur'an is a fascinating book which at the one hand satisfies the spiritual quest of the mystically inclined and on the other hand gives rational satisfaction to a scientifically minded rationalist. It is for a common layman and for a philosopher as well. It is the guideline for the social, economic and political endeavors of man and a complete religious treatise as well. We can rightly

assume that the precise scientific hints in the Holy Qur'an is a part of much studies 'Ijaz ul Qur'an and there is no harm in making science as a tool in presenting and sharing Islam with Humanity. It is a part of argumentative polemics and a defense of Faith and many scholars use this methodology in Da'wah work all over the world. It is also important because scientific method is the most dominant method in the present world and this method can be used to combat the philosophical materialism and atheistic ideologies.

**Keywords:** quran, science, and modern scientific

## A. INTRODUCTION

Fourteen centuries ago, God sent down the Qur'an to mankind as a book of guidance. He called upon people to be guided to the truth by adhering to this book. From the day of its revelation to the Day of Judgment, this last divine book will remain the sole guide for humanity. The matchless style of the Qur'an and the superior wisdom in it are definite evidence that it is the word of God. In addition, the Qur'an has many miraculous attributes proving that it is a revelation from God. One of these attributes is the fact that a number of scientific truths that we have only been able to uncover by the technology of the 20th century were stated in the Qur'an 1,400 years ago. Of course the Qur'an is not a book of science. However, many scientific facts that are expressed in an extremely concise and profound manner in its verses have only been discovered with the technology of the 20th century. These facts could not have been known at the time of the Qur'an's revelation, and this is still more proof that the Qur'an is the word of God. In order to understand the scientific miracle of the Qur'an, we must first take a look at the level of science at the time when this holy book was revealed. In the 7th century, when the Qur'an was revealed, Arab society had many superstitious and groundless beliefs where scientific issues were concerned. Lacking the technology to examine the universe and nature, these early Arabs believed in legends inherited from past generations. They supposed, for example, that mountains supported the sky above. They believed that the earth was flat and that there were high mountains at its both ends. It was thought that these mountains were pillars that kept the vault of heaven high above. However all these superstitious beliefs of Arab society were eliminated with the Qur'an. In Sura Sad, verse 2, it was said: "God is He who raised up the heavens without any support..." (The Qur'an, 38:2). This verse invalidated the belief that the sky remains above because of the mountains. In many other subjects, important facts were revealed at a time when no one could have known them. The Qur'an, which was revealed at a time when people knew very little about astronomy, physics, or biology, contains key facts on a variety of subjects such as the creation of the universe, the creation of the human being, the structure of the atmosphere, and the delicate balances that make life on earth possible.

## B. TEORETICAL REVIEW

### 1. Origin and Development of Universe/Cosmology

The origin of the universe is described in the Qur'an in the following verse: " He is the Originator of the heavens and the earth.,, (The Qur'an, 6:101).

This information given in the Qur'an is in full agreement with the findings of contemporary science. The conclusion that astrophysics has reached today is that the entire universe, together with the dimensions of matter and time, came into existence as a result of a great explosion that occurred in no time. This event, known as "The Big Bang" proved that the universe was created from nothingness as the result of the explosion of a single point. Modern scientific circles are in agreement that the Big Bang is the only rational and provable explanation of the beginning of the universe and of how the universe came into being. Before the Big Bang, there was no such thing as matter. From a condition of non-existence in which neither matter, nor energy, nor even time existed, and which can only be described metaphysically, matter, energy, and time were all created. This fact, discovered by modern physics, was announced to us in the Qur'an 1,400 years ago.

In the Qur'an, which was revealed 14 centuries ago at a time when the science of astronomy was still primitive, the expansion of the universe was described like this: "

And it is We who have constructed the heaven with might, and verily, it is We who are steadily expanding it., (51:47) The word "heaven", as stated in this verse, is used in various places in the Qur'an with the meaning of space and universe. Here again, the word is used with this meaning. In other words, in the Qur'an it is revealed that the universe "expands".

And this is the very conclusion that science has reached today. Until the dawn of the 20th century, the only view prevailing in the world of science was that "the universe has a constant nature and it has existed since infinite time". The research, observations, and calculations carried out by means of modern technology, however, have revealed that the universe in fact had a beginning, and that it constantly "expands". At the beginning of the 20th century, the Russian physicist Alexander Friedmann and the Belgian cosmologist Georges Lemaitre theoretically calculated that the universe is in constant motion and that it is expanding. This fact was proved also by observational data in 1929. While observing the sky with a telescope, Edwin Hubble, the American astronomer, discovered that the stars and galaxies were constantly moving away from each other. A universe where everything constantly moves away from everything else implied a constantly expanding universe. The observations carried out in the following years verified that the universe is constantly expanding. This fact was explained in the Qur'an when that was still unknown to anyone. This is because the Qur'an is the word of God, the Creator, and the Ruler of the entire universe.

### **Creation of the Heavens**

"Do not the Unbelievers see that the heavens and the earth were joined together (as one unit of creation), before We clove them asunder, and We made from water every living thing. Will they not then believe?," (21:30).

The word *ratq* translated as "sewn to" means "mixed in each, blended" in Arabic dictionaries. It is used to refer to two different substances that make up a whole. The phrase "we unstitched" is the verb *fataqa* in Arabic and implies that something comes into being by tearing apart or destroying the structure of *ratq*. The sprouting of a seed from the soil is one of the actions to which this verb is applied. In the verse, sky and earth are at first subject to the status of *ratq*. They are separated (*fataqa*) with one

coming out of the other. Intriguingly, when we remember the first moments of the Big Bang, we see that a single point included all the matter in the universe. In other words, everything, including "the heavens and earth" which were not created yet, were included in this point in a condition of *ratq*. This point exploded violently, causing its matter to *fataqa* and in the process created the structure of the whole universe. When we compare the expressions in the verse with scientific findings, we see that they are in perfect agreement with each other. Interestingly enough, these findings were not arrived at until the 20th century.

With the introduction of the Big Bang theory, it soon became clear to Muslim scholars that the details mentioned with regards to the theory go identically hand in hand with the description of the creation of the universe in verse 30 of chapter 21 of the Quran. The theory states that all the matter in the universe came into existence from one single extremely hot and dense point; that exploded and brought about the beginning of the universe, matches what is mentioned in the verse that the heaven and Earth (thus the universe) where once joined together, and then split apart.

## 2. Orbits

While referring to the Sun and the Moon in the Qur'an, it is emphasized that each moves in a definite orbit. "It is He Who created the night and the day, and the sun and the moon. They swim along, each in an orbit. ., (21:33)

In another verse, too, that the Sun is not static but moves in a definite orbit: "And the sun runs to its resting place. That is the decree of the Almighty, the All-Knowing. ., (37:38).

These facts communicated in the Qur'an have been discovered by astronomical observations. According to the calculations of experts on astronomy, the Sun is traveling at the enormous speed of 720,000 kilometers an hour in the direction of the star Vega in a particular orbit called the Solar Apex. This means that the sun travels roughly 17,280,000 kilometers a day. Along with the Sun, and all planets and satellites within the gravitational system of the Sun also travel the same distance. In addition, all the stars in the universe are in a similar planned motion. That the entire universe is full of paths and orbits such as this one, is written in the Qur'an as follows: "By the sky full of paths and orbits" (51:7).

There are about 200 billion galaxies in the universe, consisting of nearly 200 billion stars in each. Most of these stars have planets, and most of those planets have satellites. All of these heavenly bodies move in very precisely computed orbits. For millions of years, each has been "swimming" along in its own orbit in perfect harmony and order with all the others. Moreover, many comets also move along in the orbits determined for them. The orbits in the universe do not only belong to celestial bodies. The galaxies also travel at enormous speeds in computed, planned orbits. During these movements, none of these celestial bodies cuts across another's path, or collides with another. Surely at the time the Qur'an was revealed, mankind did not possess today's telescopes or advanced observation technologies to observe millions of kilometers of space, nor the modern knowledge of physics or astronomy. Therefore, at that time, it was not possible to determine scientifically that space is "full of paths and orbits" as stated in the verse. However, this was openly declared to us in the Qur'an that was revealed at that time:-because the Qur'an is the word of

God.

### 3. Roundness of Earth

"He has created the Heavens and the Earth for Truth. He wraps the night up in the day, and wraps the day up in the night., (39:5).

In the Qur'an, the words used for describing the universe are quite remarkable. The Arabic word that is translated as "to wrap" in the above verse is "takwir". In English, it means "to make one thing lap over another, folded up as a garment that is laid away". (For instance, in Arabic dictionaries this word is used for the action of wrapping one thing around another, in the way that a turban is put on.) The information given in the verse about the day and the night wrapping each other up includes accurate information about the shape of the world. This can be true only if the earth is round. This means that in the Qur'an, which was revealed in the 7th century, the roundness of the world was hinted at. It should be remembered, however, that the understanding of astronomy of the time perceived the world differently. It was then thought that the world was a flat plane and all scientific calculations and explanations were based on this belief. The verses of the Qur'an, however, include information that we have learned only in the past century. Since the Qur'an is God's word, the most correct words were used in it when it comes to describing the universe.

### 4. Birth of a Human Being

Many diverse subjects are mentioned in the Qur'an in the course of inviting people to believe. Sometimes the heavens, sometimes animals, and sometimes plants are shown as evidence to man by God. In many of the verses, people are called upon to turn their attention to their own creation. They are often reminded how man came into the world, which stages he has passed through, and what his essence is: "

It is We Who have created you. Why, then, do you not accept the truth? Have you ever considered that (seed) which you emit? Is it you who create it? Or are We the Creator?., (The Qur'an, 56:57-59).

The creation of man, and the miraculous aspect of this, is stressed in many other verses. Some items of information within these verses are so detailed that it is impossible for anyone living in the 7th century to have known them. Some of these are as follows:

1. Man is not created from the entire semen, but only a very small portion of it (sperm).
2. It is the male that determines the sex of the baby.
3. The human embryo adheres to the mother's uterus like a leech.
4. The embryo develops in three dark regions in the uterus.

People living when the Qur'an was revealed, to be sure, knew that the basic substance of birth was related to the semen of the male emitted during sexual intercourse. And the fact that the baby was born after a nine-month period was obviously an observable event not calling for any further investigation. However, the items of information just quoted were far above the level of learning of the people living at that time. These were verified by 20th century science.

If we keep on examining the facts announced to us in the Qur'an about the formation of human beings, we again encounter some very important scientific miracles. When the sperm of the male unites with the ovum of the female, the essence of the baby to be born is formed. This single cell, known as a "zygote" in biology, will instantly start to reproduce by dividing, and eventually become a "piece of flesh" called an embryo. This of course can only be seen by human beings with the aid of a microscope. The embryo, however, does not spend its developmental period in a void. It clings to the uterus just like roots that are firmly fixed to the earth by their tendrils. Through this bond, the embryo can obtain the substances essential to its development from the mother's body. Here, at this point, a very significant miracle of the Qur'an is revealed. While referring to the embryo developing in the mother's womb, God uses the word "alaq" in the Qur'an:"

Recite: In the name of your Lord Who created man from alaq. Recite: And your Lord is the Most Generous.,, (The Qur'an, 96:1-3).

The meaning of the word "alaq" in Arabic is "a thing that clings to some place". The word is literally used to describe leeches that cling to a body to suck blood. Certainly, the use of such an appropriate word for the embryo developing in the mother's womb proves once again that the Qur'an is a revelation from God, the Lord of all the Worlds.

Another important aspect of the information given in the verses of the Qur'an is the developmental stages of a human being in the mother's womb. It is stated in the verses that in the mother's womb, the bones develop first, and then the muscles form which wrap around them. "

(We) then formed the drop into a clot and formed the clot into a lump and formed the lump into bones and clothed the bones in flesh; and then brought him into being as another creature. Blessed be God, the Best of Creators!,, (23:14).

Embryology is the branch of science that studies the development of the embryo in the mother's womb. Until very recently, embryologists assumed that the bones and muscles in an embryo developed at the same time. For this reason, for a long time, some people claimed that these verses conflicted with science. Yet, advanced microscopic research conducted by virtue of new technological developments has revealed that the revelation of the Qur'an is word for word correct. These observations at the microscopic level showed that the development inside the mother's womb takes place in just the way it is described in the verses. First, the cartilage tissue of the embryo ossifies. Then muscular cells that are selected from amongst the tissue around the bones come together and wrap around the bones. This event is described in a scientific publication titled *Developing Human* in the following words: During the seventh week, the skeleton begins to spread throughout the body and the bones take their familiar shapes. At the end of the seventh week and during the eighth week the muscles take their positions around the bone forms. In short, man's developmental stages as described in the Qur'an are in perfect harmony with the findings of modern embryology.

### **Three Stages of the Baby in the Womb**

In the Qur'an, it is related that man is created in a three-stage process in the mother's womb. " ... He creates you stage by stage in your mothers' wombs in threefold

darkness. That is God, your Lord. Sovereignty is His. There is no god but Him. So what has made you deviate?., (39:6).

It is pointed out in this verse that a human being is created in the mother's womb in three distinct stages. Indeed, modern biology has revealed that the baby's embryological development takes place in three distinct regions in the mother's womb. Today, in all the embryology textbooks studied in faculties of medicine, this subject is taken as an element of basic knowledge. For instance in Basic Human Embryology, a fundamental reference text in the field of embryology, this fact is stated as follows: "The life in the uterus has three stages: pre-embryonic; first two and a half weeks, embryonic; until the end of the eight week, and fetal; from the eight week to labor." These phases refer to the different developmental stages of a baby. In brief, the main characteristics of these developmental stages are as follows: -

#### 1) Pre-embryonic stage

In this first phase, the zygote grows by division, and when it becomes a cell cluster, it buries itself in the wall of the uterus. While they continue growing, the cells organize themselves in three layers. -

#### 2) Embryonic Stage

The second phase lasts for five and a half weeks, during which the baby is called an "embryo". In this stage, the basic organs and systems of the body start to appear from the cell layers. -

#### 3) Fetal stage

From this stage on, the embryo is called a "foetus". This phase begins at the eighth week of gestation and lasts until the moment of birth. The distinctive characteristic of this stage is that the foetus looks just like a human being, with its face, hands and feet. Although it is only 3 cm. long initially, all of its organs have become apparent. This phase lasts for about 30 weeks, and development continues until the week of delivery. Information on the development in the mother's womb became available only after observations with modern devices. Yet, just like many other scientific facts, these pieces of information are imparted in the verses of the Qur'an in a miraculous way. The fact that such detailed and accurate information was given in the Qur'an at a time when people had scarce information on medical matters is clear evidence that the Qur'an is not the word of man, but the word of God.

### C. CONCLUDING REMARKS

By concluding, so far we have seen the compatibility of some Qur'anic verses with established scientific theories. Science is the new ilm ul Kalam as it has dominated the whole academic world leaving even philosophy behind. So as a method of Dawah it can surely be used and made a tool for the dissemination of the Islamic precepts. It's not something alien to Islam as it reveals the work of God in Nature as Qur'an is the Word of God in theology. Word of God and Work of God cannot contradict each other as their Source is One True God.

Allah has often instigated us to use our intellect and the power of introspection in thinking about the signs of God in Nature. And there are signposts in the Natural World which leads us to the Creator of Nature. So science and Qur'an both lead us to the Ultimate Truth which is the Essence of the Almighty.

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